

DEPARTMENT OF CIVIL ENGINEERING



National Institute of Technical Teachers Training and Research, Chandigarh

Civil Engineering Department



Welcome
Honorable Chairman and Members
NBA Expert Team

DEPARTMENT OF CIVIL ENGINEERING

Introduction

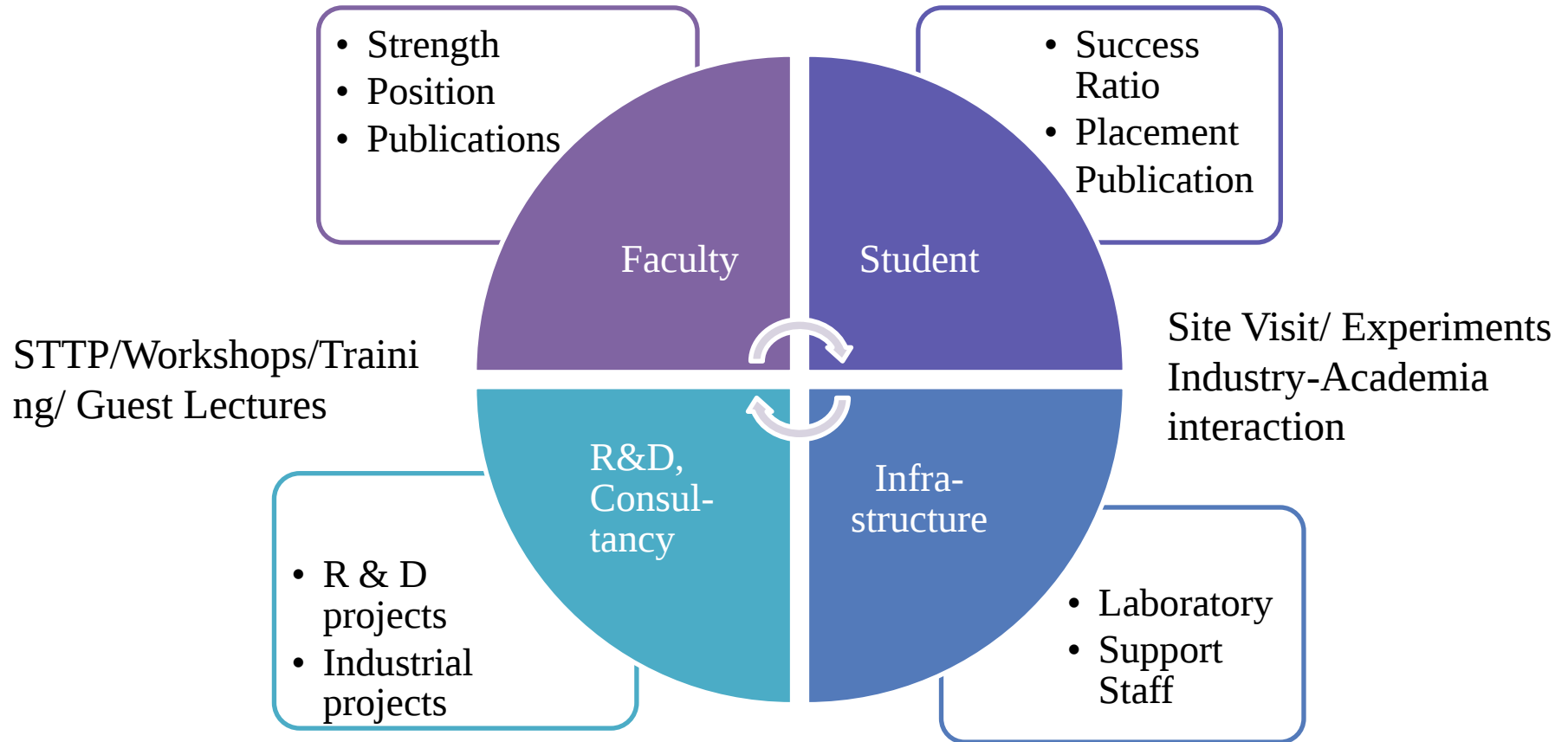
- Established in the year 1967
- Started PG programme with affiliation from Thapar University, Patiala in the year 1994
- Currently offering M.E and Ph.D programmes under QIP along with Direct Admission scheme based on O-CET test of Panjab University Chandigarh and **GATE** examination



**National Institute of Technical Teachers Training and
Research, Chandigarh**

DEPARTMENT OF CIVIL ENGINEERING

OVERVIEW



DEPARTMENT OF CIVIL ENGINEERING

Strengths

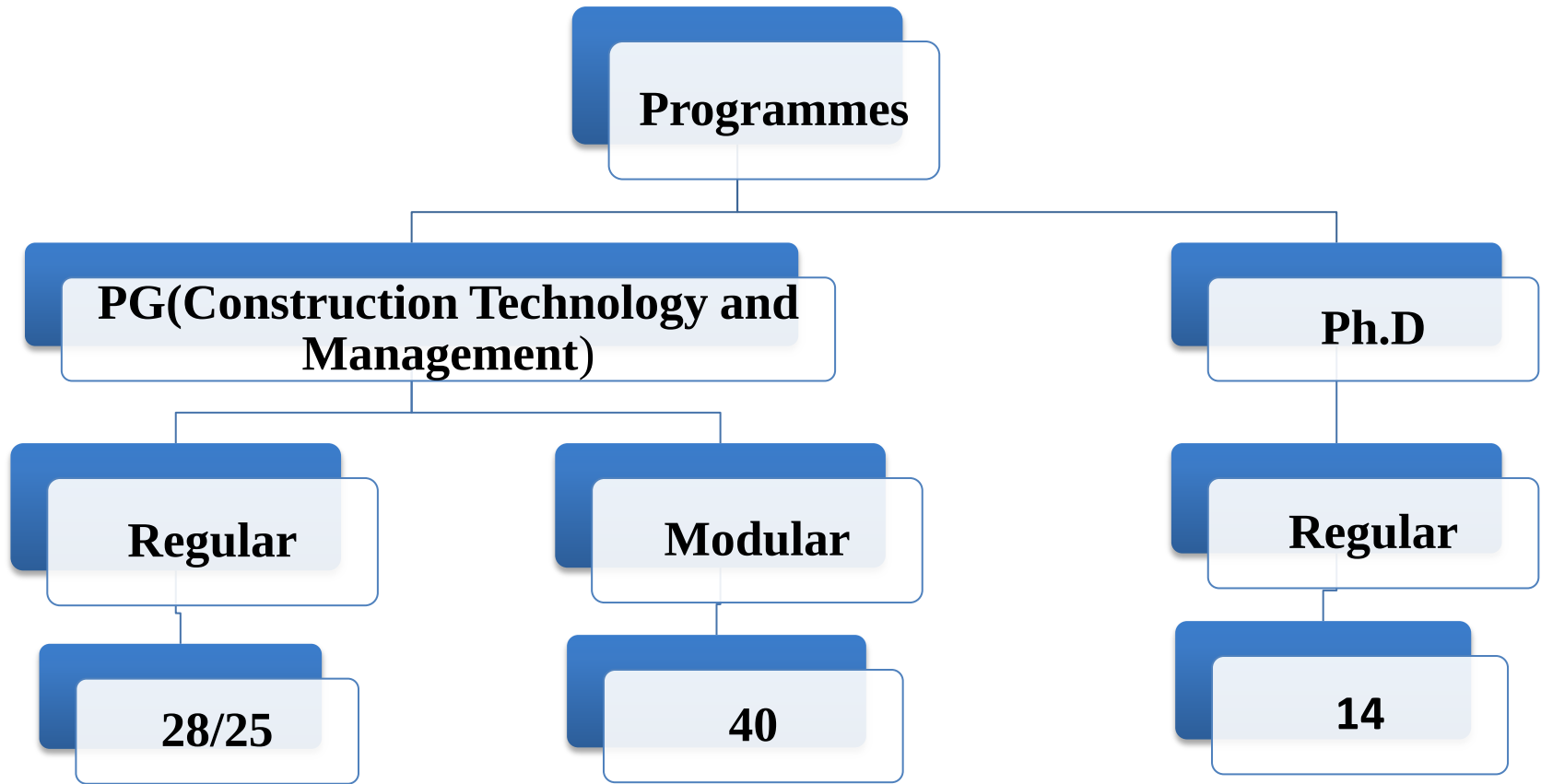
- ❑ Highly Qualified Faculty
- ❑ Well Equipped Laboratories and Infrastructure
- ❑ Dedicated Supporting Staff
- ❑ Majority of **GATE** Qualified Students
- ❑ Strong Industry Institute Interaction
- ❑ IRG through Consultancy and Testing on an average of Rs. 1.00 crore per annum



National Institute of Technical Teachers Training and Research, Chandigarh

DEPARTMENT OF CIVIL ENGINEERING

Sanctioned Intake



DEPARTMENT OF CIVIL ENGINEERING

OTHER ACADEMIC ACTIVITIES

- Development of Instructional Resources
- Extension services to technical institutions
- CEP for working professionals from industry
- R&D activities
- Consultancy services related to Testing, Design & Quality Control



**National Institute of Technical Teachers Training and
Research, Chandigarh**

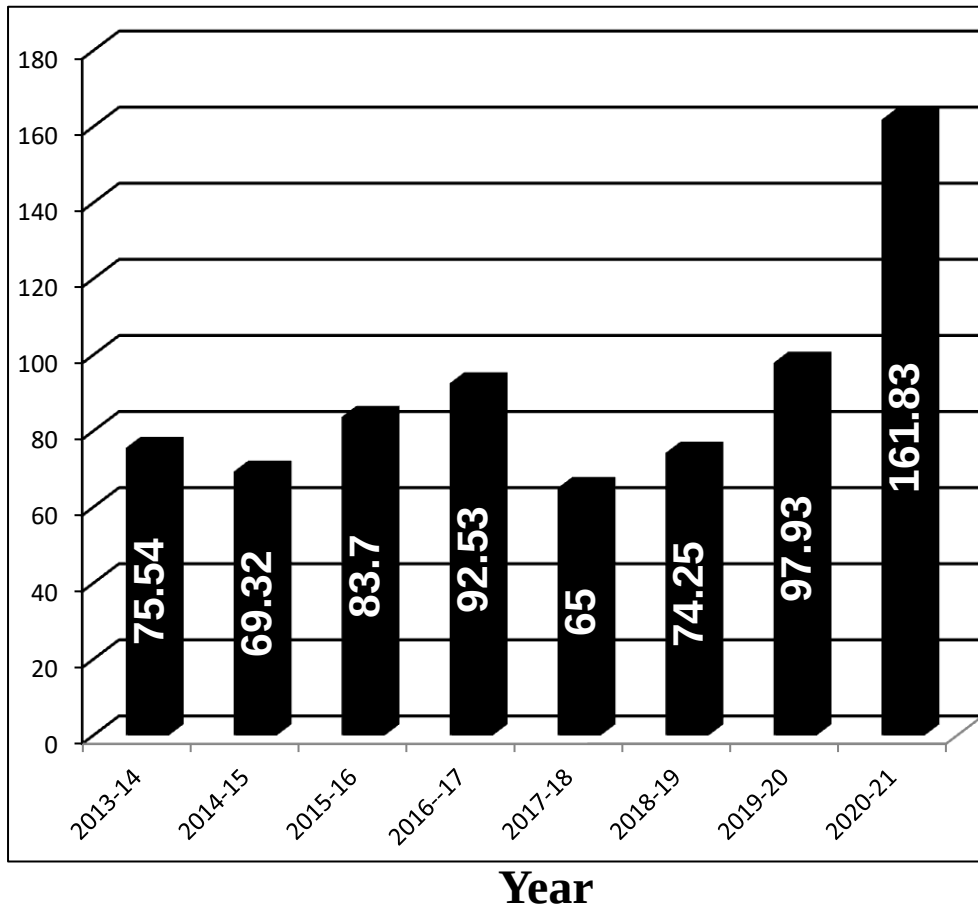
DEPARTMENT ACHIEVEMENTS

- **MOU signed with Ultratech Cement Limited in 2015, re-signed in 2022.**
- **MOU signed with MC Chandigarh for Pavement Evaluation and Quality Control for 20 years, 2019**
- **MOU signed with Dr. Fixit Institute of Structural Protection & Rehabilitation, Mumbai 2015-2017**
- **MOU signed with Bhartiya Vidya Mandir Kolkata (Supported By Simplex Infrastructures Limited) 2015-2017**



DEPARTMENT ACHIEVEMENTS

INTERNAL REVENUE GENERATED



■ Amount (in lacs)



- **IRG through Consultancy and Testing on an average of Rs. 1.00 crore per annum**

FACULTY ACHIEVEMENTS

RESEARCH PUBLICATIONS

Name of the faculty	Academic Research					
	Number of quality publications in refereed/SCI Journals, citations, Books/Book Chapters etc.			Ph.D. guided /Ph.D awarded during the assessment period while working in the institute		
	CAYm1 2019-20	CAYm2 2018-19	CAYm3 2017-18	CAYm1 2019-20	CAYm2 2018-19	CAYm3 2017-18
Dr. Hemant Sood	6	8	7	Guiding:7	Guiding:4	Guiding:2
Dr. Sanjay Sharma	8	13	22	Guiding:6 Awarded:5	Guiding:6 Awarded:2	Guiding:5 Awarded:3
Er. A.K Duggal	5	8	9	-	-	-
Er. Vinod Sonthwal	5	4	2	-	-	-
Dr. Amit Goyal	2	-	-	Guiding-2	-	-
Er. Himmi Gupta	1	5	-	-	-	-

FACULTY ACHIEVEMENTS

Ph.D Recognized Guide

Sr. No.	Name of Faculty	Recognition From
1	Dr. Sanjay Sharma	Panjab University, Punjab Technical University, Chitkara University
2	Dr. Hemant Sood	Panjab University
3	Dr. Amit Goyal	Panjab University

AWARDS AND HONOURS OF FACULTY

- Dr. Sanjay Sharma has been appointed as the chairman of Indian Concrete Institute
- NITTTR Admitted as Organisation Life Member of Indian Concrete Institute
- Member of IGBC Student Chapter



AWARDS AND HONOURS OF FACULTY



Dr. Amit Goyal received “Young Concrete Engineer Award 2016-2017” for innovative project “Earthquake Resistant Interlinked Block Masonry System with Visco-Elastic Energy Dissipator Links” by Indian Concrete Institute.

AWARDS AND HONOURS OF FACULTY

- **Dr. Amit Goyal awarded with Best Paper Award in Structural Engineering, 2018 in National Conference on Next Frontiers in Civil Engineering-Sustainable and Resilient Infrastructure organized by IIT, Bombay**
- **Dr. Amit Goyal awarded with Gold Prize under young scientist award under poster session of International Society for Integrated Disaster Risk Management on Disaster Risk Reduction**

STUDENT'S ACHIEVEMENTS

Batch Year	Number of Publications
2016-18	18
2017-19	21
2018-20	14

RENOWNED ALUMNI

Sr. No.	Name of the Alumnus	Affiliation
1	Dr. Tom Bran	VC, Manipal Technical University
2	Dr. NB Singh	Ex VC, HBTU, Kanpur
3	Er. Devender Chawla	MD, Samriti Engineers Pvt. Ltd.

YOUNG ENTREPRENEURS

Sr. No.	Name of the Alumnus	Affiliation
1	Er. Ashish Kapoor	Entrepreneur: Working as Consultant
2	Er. Simranjeet Singh	Geo-tech Consultant
3	Er. Harjeet Singh	Design Consultant (Structures, Highways, Survey Work)
4	Er. Harman	Design Consultant (Structures, Highways, Survey Work)
5	Er. Ankit Rattan	Design Consultant (Structures, Highways, Survey Work)
4	Er. Shashank Dwivedi	Structural Engg.

VISION OF DEPARTMENT

To be a leader in academics and research in Civil Engineering with emphasis on value-based state of art technical knowledge, innovation, sustainability and entrepreneurial skills

MISSION OF THE DEPARTMENT

- **Offer training programs and competency building in teaching learning in the field of Civil Engineering in flexible mode**
- **Develop and implement demand driven curricula to produce socially responsible, creative and innovative manpower in Civil Engineering**
- **Develop Instructional material in the field of Civil Engineering to enhance effectiveness of teaching-learning process**
- **Undertake Research and Development in Civil Engineering for sustainable development**
- **Provide Extension and Consultancy services to Industry and Public and Private Sector Organizations in the field of Civil Engineering and build strong linkages with Industry and other organizations at National and International level for capacity building and technological innovations**

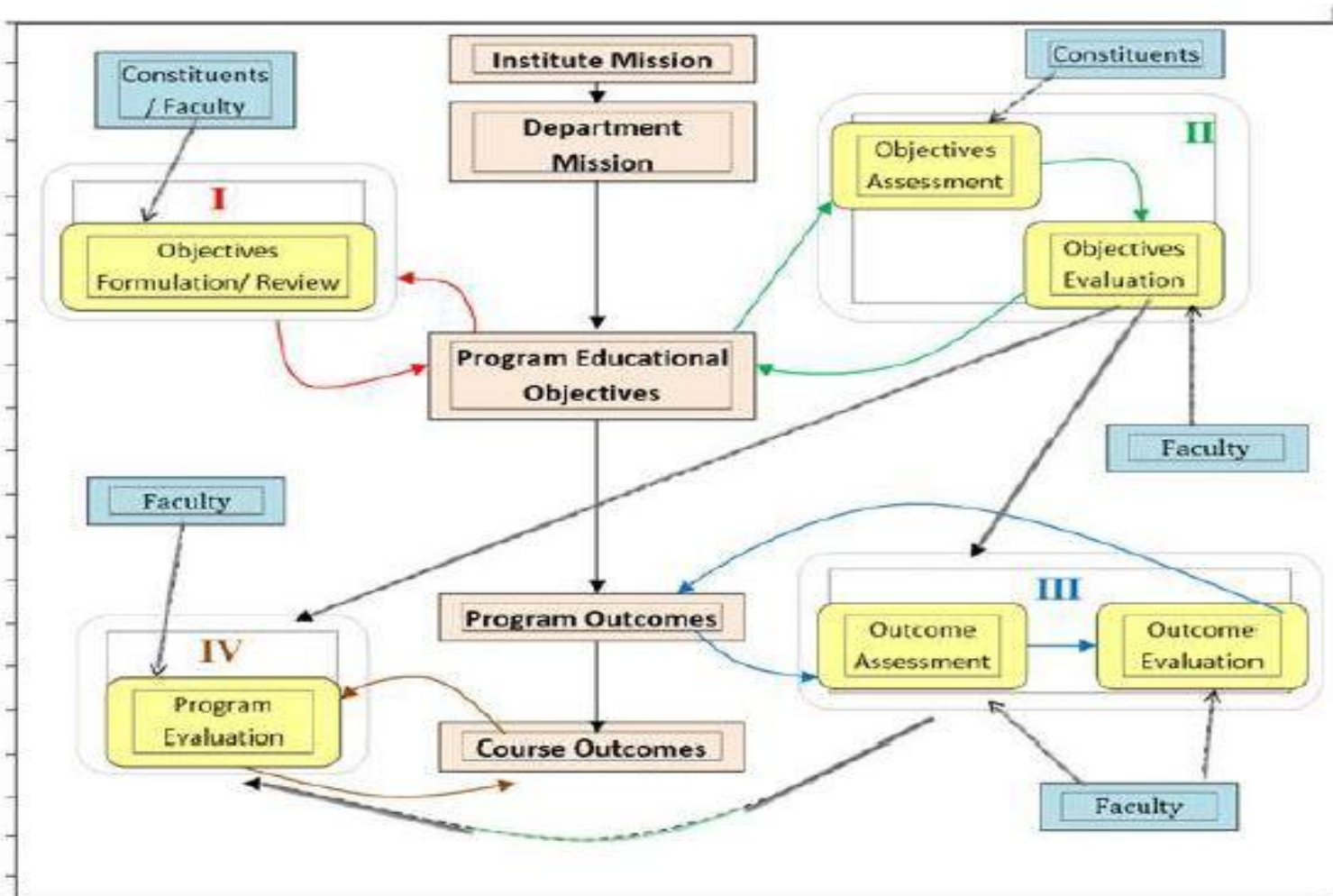


Figure 1: Formulation of PEOs

PROGRAM SPECIFIC OUTCOMES AND EDUCATIONAL OBJECTIVES

PEO 1

- Graduates of the program will have in-depth knowledge to apply appropriate research methodologies, use modern Engineering tools and provide technically sound, Economical and sustainable solutions in the area of Construction Technology & Management.

PEO 2

- Graduates will have ability for higher studies and undertake high value research on Construction & Management and other related issues.

PEO 3

- Graduate of program will have sound analytical and lateral thinking ability to engage in lifelong learning for professional advancement to cope up with multidisciplinary and changing technologies in Construction & Management.

PEO 4

- Graduates of the program will have sense of social responsibility, will demonstrate ability to communicate and work effectively as a team member in an ethical way, will play leadership roles in their profession, public services and community

Program Curriculum and Teaching Learning Process

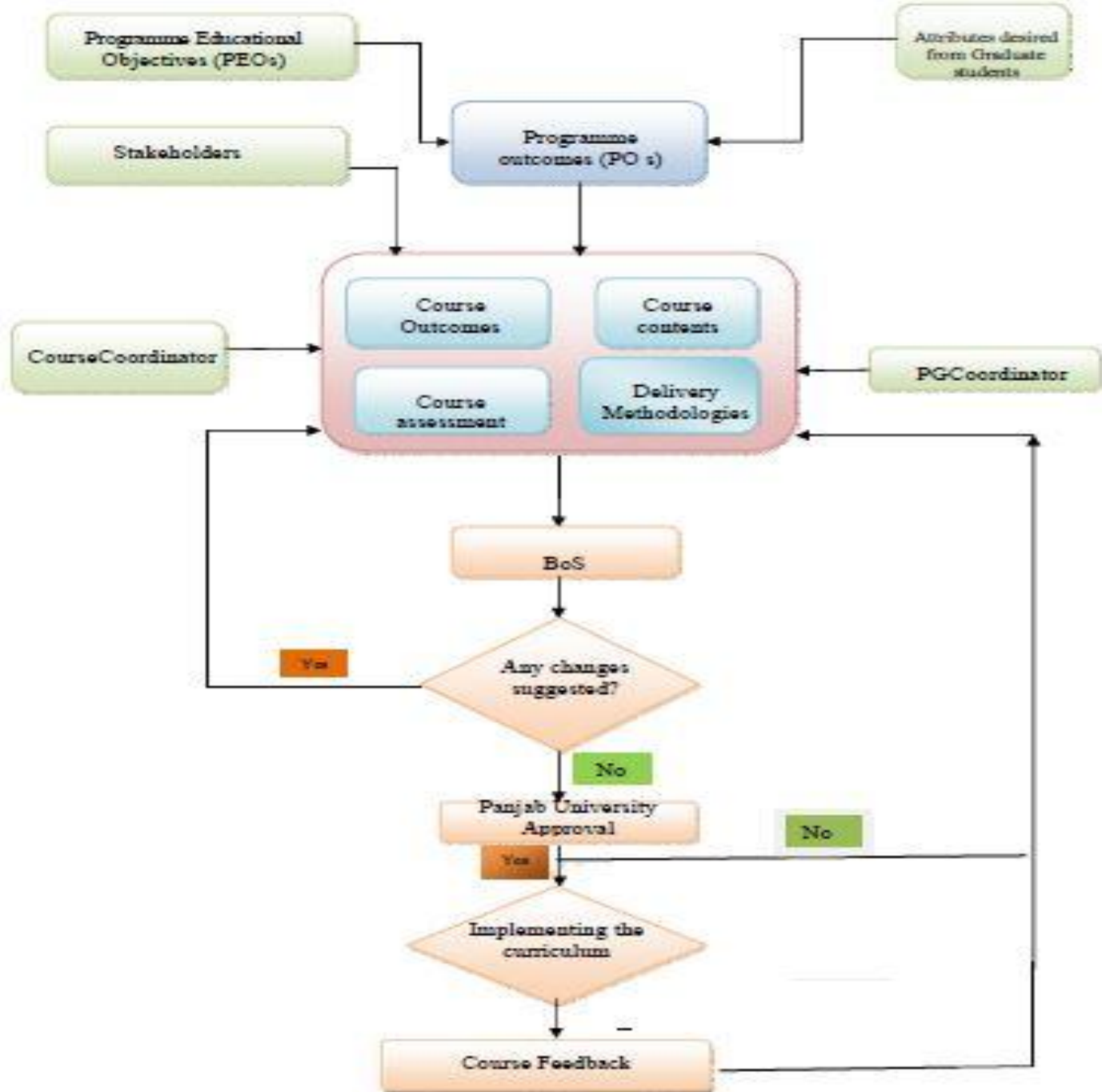


Figure 2: Process for Development of Programme Curriculum

STRUCTURE OF THE CURRICULUM

STUDY & EVALUATION SCHEME OF M.E. IN CIVIL ENGINEERING (CONSTRUCTION TECHNOLOGY & MANAGEMENT)

FIRST SEMESTER	SUBJECTS	SCHEDULE FOR TEACHING			Credits	Marks		
		L	P/T	Total		Theory	Sessional	Total
MCT 6101	Construction Management	3	2	5	4	50	50	100
MCT 6102	Concrete Construction Technology	3	2	5	4	50	50	100
MCT 6103	Pavement Design Construction and Maintenance	3	2	5	4	50	50	100
MCT 6105	Construction Costing and Financial Management	3	-	3	3	50	50	100
MCT 6107	Pavement Lab.	-	3	3	2	-	50	50
ELECTIVE SUBJECTS (ANY ONE)								
MCE 6171	Computer Applications in Civil Engg.	2	4	6	4	50	50	100
MCT 6106	Advanced Structural Design and Detailing	3	2	5	4	50	50	100
MCT 7103	Design of Pre-stressed Concrete Structures	3	2	5	4	50	50	100
MTE 7103	Technology Management	4	-	4	4	50	50	100
MMT 6109	Optimization Techniques	4	-	4	4	50	50	100
TOTAL					21	250	300	550

STRUCTURE OF THE CURRICULUM

STUDY & EVALUATION SCHEME OF M.E. IN CIVIL ENGINEERING (CONSTRUCTION TECHNOLOGY & MANAGEMENT)

CODE	SUBJECT	SCHEDULE FOR TEACHING			Credits	Marks		
		L	P/T	Total		Theory	Sessional	Total
SECOND SEMESTER CORE SUBJECTS								
MCT 6201	Environmental Engineering & Management	3	2	5	4	50	50	100
MCT 6202	Building Maintenance	3	2	5	4	50	50	100
MCT 6208	Foundation Design and Construction	3	2	5	4	50	50	100
MCT 6206	Advanced Construction Technology	3	2	5	4	50	50	100
MCT 6209	Foundation Engineering Lab	-	3	3	2	-	50	50
ELECTIVE SUBJECTS (ANY ONE)								
MCT 6203	Construction Equipment	3	2	5	4	50	50	100
MCT 6204	Green Buildings and Services	3	2	5	4	50	50	100
MCT 6205	Bridge Engineering	3	2	5	4	50	50	100
TOTAL					22	250	300	550

CODE	SUBJECT	SCHEDULE FOR TEACHING				Credits	Marks		
		L	P	T	Total		Theory	Sessional	Total
THIRD SEMESTER CORE SUBJECT									
MCT 7104	Transportation Engineering	3	2		5	4	50	50	100
ELECTIVE SUBJECTS (ANY ONE)									
MCT 6207	Design and Construction of Hydraulic Structures	3	2		5	4	50	50	100
MCT 7101	Steel Construction Technology	3	-		3	3	50	50	100
MCT 6104	Rural Construction Technology	3	-		3	3	50	50	100
MTE 6202	Research Methodology	3	2		5	4	50	50	100
PRELIMINARY THESIS									
MCT 7151	Thesis Preliminary	-	20		20	10	-	-	-
TOTAL:						17	100	100	200
FOURTH SEMESTER									
MCT 7251	Thesis	-	30		30	15	-	-	-

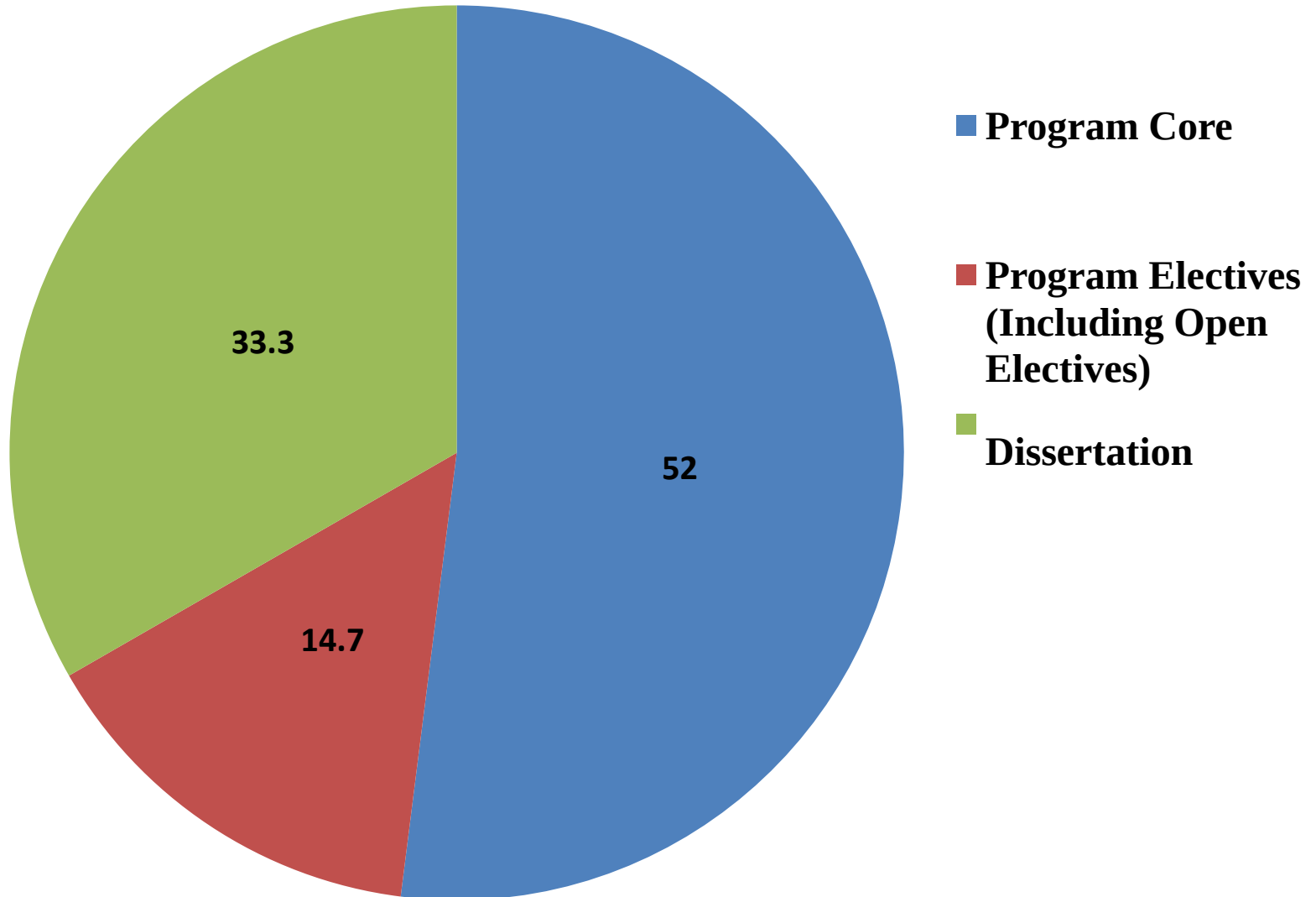
COMPONENTS OF THE CURRICULUM

Program curriculum grouping based on course components

Course Component	Curriculum Content (% of total number of credits of the program)	Total number of contact hours (Per week)	Total number of Credits
Program Core **	52	49	39
Program Electives (Including Open Electives)	14.7	13	11
Dissertation	33.3	50	25
Total number of Credits			75

****Program core courses include both Theory and Practical Courses.**

COMPONENTS OF THE CURRICULUM



MEMBERS OF THE DEPARTMENTAL POST GRADUATE PROGRAM COMMITTEE (DPPC)

External Members:

- **Dr. Umesh Sharma, Professor, PEC, Sector 12, Chandigarh**
- **Dr. Mahesh Kumar, Former Member DDA, Vikas Sadan, New Delhi**
- **Dr. Pankaj Agarwal, Professor & Head, IIT, Roorkee**
- **Dr. S.K Singh, Principal Scientist, CBRI, Roorkee**
- **Er. Devender Chawla, Managing Director, Navintam Construction Pvt. Ltd., Mohali**

Internal Members:

- **All faculty associated with the program**

INDUSTRY INVOLVEMENT IN CURRICULUM

- IGBC
- Punjab Indian Institute of Architects
- NTPC
- PEDA
- Water Resources and Environment Directorate
- CBRI
- HUDCO
- Simplex Infrastructure
- Build Care Services
- Cement Industry
- Slipform Constructions
- Usha Martin
- UTS Technical Systems

TEACHING-LEARNING PROCESSES

Examination Pattern

Examination Pattern Component	Marks
1st Mid – Term Examination after 4 weeks	15
2nd Mid – Term Examination after 8 weeks	15
Continuous Internal Assessment	20
End Semester Examination	50

Pre-Thesis Evaluation

Sr. No.	ITEM	Total Marks
1	Literature survey : (Adequacy , Quality and relevance Presentation of review , Conclusion of review)	25
2	Problem Definition and Objective : Relevance of Problem, Importance, Problem Defined Appropriately Theoretical Background/Rational and Proposal	10
3	Quality of written report : Organization of content (Formatting, Coherence and Language), Presentation through table & graph/experiment work/ construction of tools, Bibliography/ References	35
4	Presentation in the Seminar : Quality of material presented, Quality of Media Used, Effectiveness of Presentation , Ability to Answer Queries	30
	Total =	100

Final Thesis Evaluation

Sr. No.	ITEM	Total Marks
1	Literature survey : (Adequacy , Quality and relevance Presentation of review , Conclusion of review)	25
2	Methodology : (Presentation of method , Adequacy , Linkages to standard method)	25
3	Quality of written report : (Organization of content , Presentation through table & graph/experiment work/ construction of tools, Result Discussions, Bibliography/ References)	60
4	General Overview : (Problem formulation , Technical inputs ,General intelligence, Comprehension	25
5	Presentation in the Seminar : (Quality of material presented, Quality of Media Used,Effectiveness of Presentation , Ability to Answer Queries)	25
6	Content: (Consistently appropriate, Analysis is logical & Sound ,No gaps in topics coverage ,Innovative Research Data/Analysis clearly support the project)	60
	Total =	200

GRADING CRITERIA	MARKS
Rejected	No Marks
Average	< 55
Good	55-80
Very Good	> 80

CURRICULUM GAP ADDRESSING TECHNIQUE

We are focusing on term paper to train and enhance the writing skill of the students for 1st year ME students. Two hours training program is conducted by Dr. Sanjay Sharma for the same.

- **Students are asked to submit the review papers on their respective topics.**
- **PG students are given exposure to live projects from which they get idea of their project work.**
- **We conduct webinars for ME students on regular basis to enhance their knowledge.**
- **Each group conduct meeting at the end of every month to get the update and also the faculty is motivated and guided in this direction to achieve the target. Students are motivated to publish the quality research paper in SCI or Scopus indexed journals.**
- **Students will be engaged with those facilities who are currently pursuing PhD from NITTTR, so that both are benefited.**

Program Outcomes and Course Outcomes

M. E – CIVIL ENGINEERING
(CONSTRUCTION TECHNOLOGY AND MANAGEMENT)

PROGRAM OUTCOMES (POS)

PO-1 An ability to independently carry out research/investigations and development to solve practical problems and apply analytical tools in Civil Engineering.

PO-2 Ability to write and present a substantial technical report / document/ proposal etc.

PO-3 Students should be able to demonstrate a degree of mastery in Construction Technology & Management for various Civil Engineering projects.

PO-4 Students should have necessary knowledge and skills in project management.

PO-5 Apply the knowledge of Modern Construction Practices and Techniques for developing problem solving attitude for construction of Civil Engineering Projects incorporating Sustainable practices.

M. E – CIVIL ENGINEERING (CONSTRUCTION TECHNOLOGY AND MANAGEMENT)

PEOs – POs Mapping

PEOs	POs				
	PO1	PO2	PO3	PO4	PO5
Graduates of the program will have in-depth knowledge to apply appropriate research methodologies, use modern Engineering tools and provide technically sound, Economical and sustainable solutions in the area of Construction Technology and Management.	✓		✓	✓	✓
Graduates will have ability for higher studies and undertake high value research on construction & Management and other related issues.		✓	✓		✓
Graduate of program will have sound analytical and lateral thinking ability to engage in lifelong learning for professional advancement to cope up with multidisciplinary and changing technologies in Construction & Management.	✓	✓		✓	✓
Graduates of the program will have sense of social responsibility, will demonstrate ability to communicate and work effectively as a team member in an ethical way, will play leadership roles in their profession, public services and community.	✓	✓	✓		✓

RELEVANCE OF PROGRAM OUTCOMES TO COURSES

PO-1	An ability to independently carry out research /investigation and development work to solve practical problems	Concrete Construction Technology Foundation Design and Construction Pavement design, Construction and Maintenance Environmental Engineering and Management Construction Costing and financial management Advanced Structural design and Detailing Pavement Lab Building Maintenance Construction Equipment Green Building and Services Advanced Construction Technology Foundation Design and Construction Foundation Engineering Lab Rural Construction Technology Transportation Engineering
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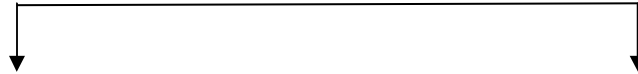
RELEVANCE OF PROGRAM OUTCOMES TO COURSES

PO-2	An ability to write and present a substantial technical report/document	Concrete Construction Technology Advanced Structural Design and Detailing Pavement Lab Pavement design, Construction and Maintenance Foundation Design and Construction Foundation Engineering Lab
PO-3	Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.	Concrete Construction Technology Environmental Engineering and Management Building Maintenance Construction Equipment Green Building and Services Foundation Engineering Lab Steel Construction Technology

RELEVANCE OF PROGRAM OUTCOMES TO COURSES

PO-4	Students should have necessary knowledge and skills in project management.	Construction Equipment Foundation Design and Construction Foundation Engineering Lab Transportation Engineering Construction Management Building Maintenance Green Building and Services Rural Construction Technology
PO-5	Apply the knowledge of Modern Construction Practices and Techniques for developing problem solving attitude for construction of Civil Engineering Projects incorporating Sustainable practices.	Construction Management Construction Costing and financial management Concrete Construction Technology Advanced Structural design and Detailing Environmental Engineering and Management Pavement Lab Building Maintenance Construction Equipment Green Building and Services Advanced Construction Technology Foundation Design and Construction Foundation Engineering Lab Rural Construction Technology Transportation Engineering

PO ASSESSMENT



Direct Method

- 1) Assignments and Seminars**
- 2) Sessional tests**
- 3) End Semester Examinations**

Indirect Method

- 1) Program Exit Survey (Students' Feedback)**
- 2) Alumni Feedback**
- 3) Employer Feedback**

DIRECT ASSESSMENT

Direct PO attainment is evaluated as

$$P_i(D) = \frac{\sum_{k=1}^N G_k S_k W_{ik} C_k}{\sum_{k=1}^N 10 S_k W_{ik} C_k}$$

G_k = Grade Point Average of the k^{th} Course

S_k = Number of students taking the k^{th} Course

W_{ik} = Weight assigned for the k^{th} Course mapped to i^{th} PO

C_k = Total credits of the k^{th} Course

N = Number of Courses

INDIRECT ASSESSMENT

Assessment of i^{th} PO on the basis of Relevance:

$$P_i(R) = \frac{\sum_{s=1}^5 N_s W_s}{N \times 5}$$

Assessment of i^{th} PO on the basis of Usefulness:

$$P_i(U) = \frac{\sum_{s=1}^4 N_s W_s}{N \times 4}$$

where

N_s = Number of students who agree on scale s

W_s = Weightage assigned to scale s

N = Total number of students

Indirect Assessment of i^{th} PO is computed using the following formulae:

$$P_i(I) = 0.5 \times P_i(R) + 0.5 \times P_i(U)$$

ATTAINMENT OF COURSE OUTCOMES

Assessment of Questions in Internal Test I (Advanced Structural Design and Detailing) M.E CTM Regular Batch 2019

Question No.	Need Improvement	Satisfactory
#1	4	20
#2	6	18
#3	7	17

Total Students= 24

	Course outcome attainment through questions in Internal Test I	(No. of students performed satisfactory/ total no. of students) * weightage given to question for attainment of a particular CO	
CO1	Q2 (Weightage 100%)	$(18/24)*100 = 75\%$	75%
CO2	Q2 (Weightage 100%)	$(18/24)*100=75\%$	75%
CO3	Q1 (Weightage 50%) Q3 (Weightage 50%)	$(20/24)*50=42\%$ $(17/24)*50=35\%$	77%
CO4	Q1 (Weightage 100%)	$(20/24)*100=83\%$	83%

ATTAINMENT OF COURSE OUTCOMES

Internal Test I was based on CO1, CO2, CO3 and CO4 of the subject ASDD and above analysis shows that we have attained 75%, 75%, 77%, 83%.

It was decided to have course outcome attainment of at least 75% or above and from above observations it is found that course outcomes mapped with internal test question paper were achieved at least 75%.

ATTAINMENT OF COURSE OUTCOMES

(Advanced Structural Design and Detailing)

M.E CTM Regular Batch 2019

	CO% attainment		CO1	CO2	CO3	CO4
Internal Test1	77.5		75	75	77	83
Internal Test2	83.5		-	-	78	89
Final Test	83		77	100	63	92
%Attainment of COs			76	87.5	72.7	88

M. E - CIVIL ENGINEERING
(CONSTRUCTION TECHNOLOGY AND MANAGEMENT)

Sample Course Outcomes

ADVANCED STRUCTURAL DESIGN AND DETAILING

CO	PO				
	PO1	PO2	PO3	PO4	PO5
CO1: Apply the Design philosophies, Indian Standard Provisions for the design of advanced structural elements and structures	3	1			2
CO2: Calculate the various Loadings as per Indian Standards for design of structures.	3	1			1
CO3: Analyze the basic and complex RCC structures	3	2	1		2
CO4: Design and detailing of complex and basic RCC structures	3	2	1		2

<u>Degree of Correlation</u>	<u>Scale</u>
Low	1
Medium	2
High	3

% ATTAINMENT OF POS THROUGH CO ATTAINMENT: (2016-18 BATCH)

Name of Course	Credits	PO1	PO2	PO3	PO4	PO5
MCT 6101 Construction Management	4	78%	78%	78%	78%	78%
MCT 6102 Concrete Construction Technology	4	67%	67%	67%	67%	67%
MCT 6103 Pavement Design Construction and Maintenance	4	64%	64%	64%	-	64%
MCT 6105 Construction Costing And Financial Management	3	74%	74%	74%	74%	74%
MCT 6106 Advanced Structural Design And Detailing	4	68%	68%	68%	-	68%
MCT 6107 Pavement Lab	2	74%	74%	74%	-	74%
MCT 6201 Environmental Engineering And Management	4	87%	87%	87%	-	87%
MCT 6202 Building Maintenance	4	81%	81%	81%	81%	81%
MCT 6208 Foundation Design And Construction	4	67%	67%	67%	67%	67%
MCT 6206 Advanced Construction Technology	4	71%	71%	71%	71%	71%
MCT 6204 Green Buildings And Services	4	84%	84%	84%	84%	84%
MCT 6209 Foundation Engineering Lab	2	78%	78%	78%	78%	78%
MCT 7104 Transportation Engineering	4	69%	69%	69%	69%	69%
MCT 6104 Rural Construction technology	3	84%	84%	84%	84%	84%
Attainment levels (%)		74.29	73.25	75.63	75.43	75.03

PO ASSESSMENT

EXAMPLE OF CALCULATION FOR PO ATTAINMENT

- 2016-18

PERFORMANCE CRITERIA FOR PO ASSESSMENT

2016-18	
$PO \geq 75\%$	Very Good (3)
$70\% \leq PO < 75\%$	Good (2)
$PO < 70\%$ (Minimum Target)	Needs Improvement (1)

The minimum criterion of 70% was decided based on previous year records wherein the achievement was above 70%

The standard deviation obtained in the previous year was in the range of 0.5 to 1.7%.

Based on performance in the above years, the target for the next year was raised to 75%

2018-20	
$PO \geq 80\%$	Very Good (3)
$75\% \leq PO < 80\%$	Good (2)
$PO < 75\%$ (Minimum Target)	Needs Improvement (1)

POs ATTAINMENT

Direct Assessment



Program Outcomes

■ 2016-2018
 ■ 2017-2019
 ■ 2018-2020

POs ATTAINMENT

Indirect Assesment



Program Outcomes

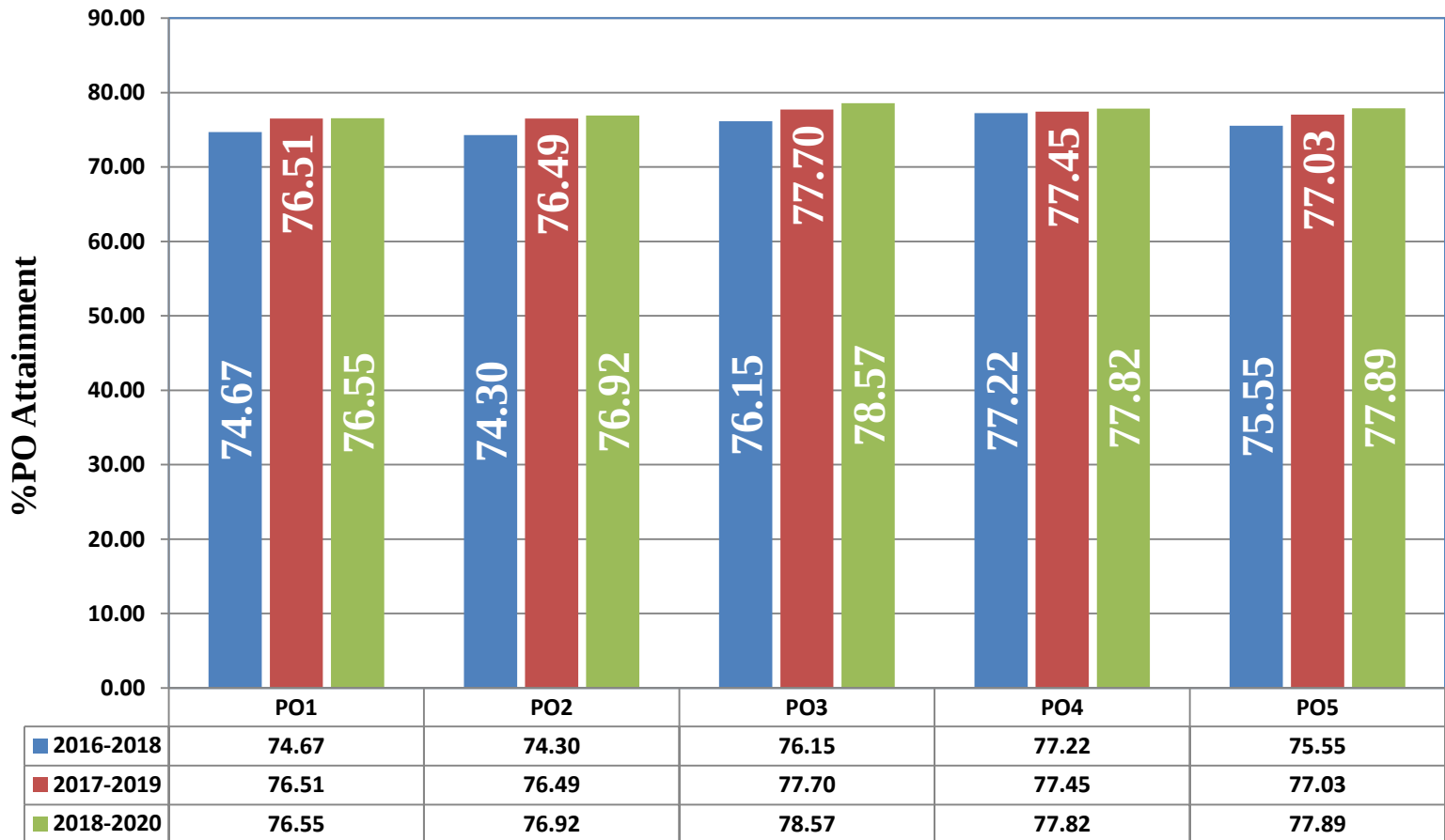
2016-2018 2017-2019 2018-2020

POs ATTAINMENT

PO attainment = 0.8 x Direct PO attainment + 0.2 x Indirect PO attainment

$P_i = 0.8 \times P_i(D) + 0.2 \times P_i(I)$

Overall PO Attainment



Program Outcomes

2016-2018 2017-2019 2018-2020

ATTAINMENT OF PO'S THROUGH DISSERTATION

THESIS WORK	IN HOUSE	COLLABORATION WITH INDUSTRIES
2016-18	14	6
2017-19	19	6
2018-20	11	9

ACTION TAKEN FOR IMPROVING POs

- The guide allocation for ME 1st year student is done before in the second semester.**
- A student in a particular specialization CTM (Construction Technology & Management) must choose a guide from same socialization.**
 - Every faculty is allotted at least one thesis student, with a maximum of 5 students.**
 - Student preferences will be taken for choice of guide (preference1, preference 2 & preference 3).**
 - If the number of students giving preference 1 to one particular faculty exceeds the number of slots for that faculty, then the applying students will be sorted based on their CGPA. This process will be repeated for further iterations to allocate the remaining students according to their 2nd preference, etc.**

Students' Performance

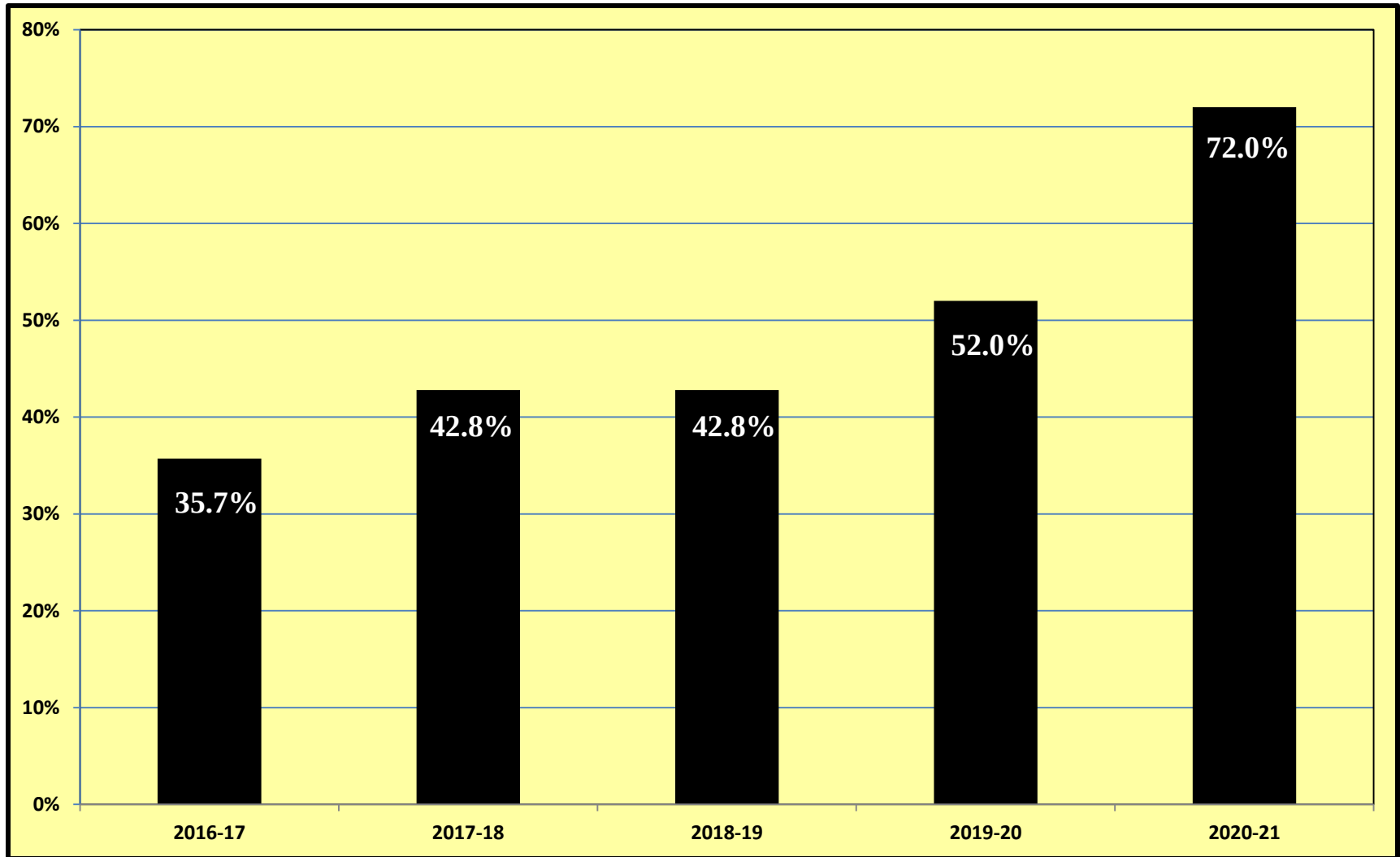
ADMISSION INTAKE IN THE PROGRAMME

YEAR	CAY (2020-21)	CAYm1 (2019-20)	CAYm2	CAYm3 (2017-18)	CAYm4 (2016-17)
			(2018-19)		
Sanctioned intake of the program (N)	25	25	28	28	28
Total number of students admitted through GATE (N1)	18	13	12	12	10
Total number of students admitted through PG Entrance and others (N2)	7	11	11	16	18
Total number of students admitted in the Program (N1 + N2)	25	24	23	28	28

Highest Gate Score - 563

Lowest Gate Score- 263

ENROLMENT RATIO THROUGH GATE



SUCCESS RATE

Year of entry	N1 + N2 (As defined above)	Number of students who have successfully graduated	
		I Year	II Year
CAY (2020-21)	25		
CAY _{m1} (2019-20)	24	21	
CAY _{m2} (2018-19)	23	23	20
CAY _{m3} (2017-18)	28	27	26
CAY _{m4} (2016-17)	28	26	19

PLACEMENT, HIGHER STUDIES AND ENTREPRENEURSHIP

Item	CAYm2 (2019-20)	CAYm3 (2018-19)	CAYm4 (2017-18)
No. of students placed in companies or Government Sector (X)	14	17	10
No. of students pursuing Ph.D. / JRF/ SRF(Y)	1	3	3
No. of students turned entrepreneur in engineering/technology (Z)	0	0	0
X + Y + Z=	15	20	13
Sanctioned Intake, N	28	28	28
Placement Index : (X+ Y + Z)/N	0.54	0.71	0.46
Average placement= (P1 + P2 + P3)/3	0.57		

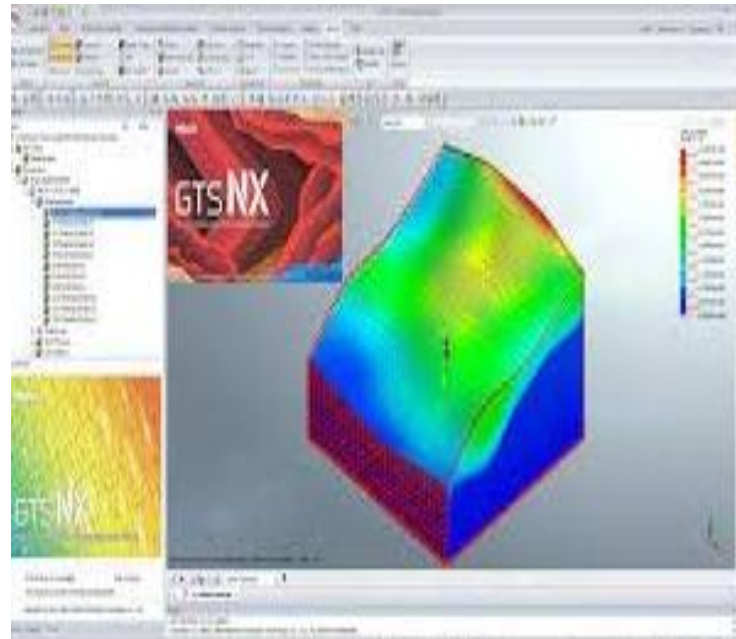
STUDENT PARTICIAPTION IN PROFESSIONAL ACTIVITIES

Sr. No.	Participation in professional society	Venue	Year
1.	Indian Green Building Council Student Chapter	NITTTR Chandigarh.	Since 2015
2.	Indian Concrete Institute	NITTTR Chandigarh.	Since 2019
3.	GEM ASSOCHAM	NITTTR Chandigarh.	Since 2020
4.	The Institution of Engineers (India)	NITTTR Chandigarh.	Since 2021

STUDENTS DURING FIELD VISIT AND FIELD WORK



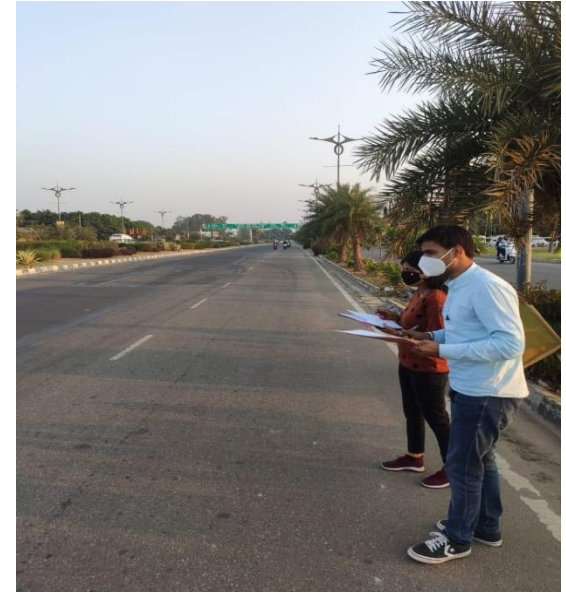
STUDENTS DOING THESIS WORK



STUDENTS DOING THESIS WORK

SAMPLE PREPERATION AND TESTING





Students Involved in Consultancy Work of the Department

Faculty Information and Contributions

M. E - CIVIL ENGINEERING
(CONSTRUCTION TECHNOLOGY AND MANAGEMENT)

Faculty Contributing to the Program

Sr. No.	Name of Faculty	Highest Qualification	Designation
1	Dr. Sanjay Sharma	Ph.D (Engineering & Technology Civil)	Professor
2	Dr. Hemant Sood	Ph.D (Management)	Professor
3	Er. Ajay K. Duggal	M.E. (Transportation Engineering)	Associate Professor
4	Er. Vinod Kumar Sonthwal	M.Tech Hons. (Geo-Technical Engineering)	Associate Professor

**M. E - CIVIL ENGINEERING
(CONSTRUCTION TECHNOLOGY AND MANAGEMENT)**

Faculty Contributing to the Program

Sr. No.	Name of Faculty	Highest Qualification	Designation
5	Dr. Amit Goyal	Ph.D (Earthquake Engineering, IIT, Roorkee)	Assistant Professor
6	Er. Himmi Gupta	M.S (Civil Engineering), USA	Assistant Professor

FACULTY NAME AND SPECIALIZATION

Name of Faculty	Relevant Area of Specialization
Dr. Hemant Sood	Concrete Technology, Pavement Design, Transportation Engineering, Bridge Engineering
Dr. Sanjay Sharma	Building Maintenance; Repair & Rehabilitation; Environmental Management; Water Resources, Green Construction, Rural Construction
Er Ajay Duggal	Transportation Engineering , Pavement Design, Bridge Engineering, Advanced Construction Technology, Foundation Engineering
Er. Vinod Sonthwal	Geotechnical Engg, Construction Management
Dr. Amit Goyal	Earthquake Engineering, Structural Dynamics, Rural Construction, Construction Costing & Financial Management, Advanced Construction
Er. Himmi Gupta	Construction Management, Structural Engineering, Sustainable Construction Environmental Management & Building Maintenance

CONTRIBUTION AT NATIONAL LEVEL

- **Member, NBA for Civil**
- **Member of AICTE Committees**
- **Chandigarh Environment Department**
- **Member, Committee for EVC**
- **Member for MODROBS Evaluation Scheme**
- **Member of Committee for Clean Campus Award of AICTE**
- **UGC Team For Status review of universities**
- **Chandigarh Pollution Control Technical committee**
- **Expert Member for State Environmental Appraisal Committee Chandigarh**
- **Member of Wet Land Committee of Chandigarh**
- **Chairman of Indian Concrete Institute Chandigarh Chapter**
- **Technical Assessor, NABL**

CONTRIBUTION AT NATIONAL LEVEL

- **Fellow, Indian Institute of Engineers**
- **Chartered Engineer- Institute of Engineers**
- **Member–Evaluation Committee And Steering Committee for preparation of State Environment Report, Chandigarh**
- **Member Board of studies of Panjab University, Chitkara University, Chandigarh University, Shoolini University, PTU Jalandhar, MRSPTU Bathinda, Punjab Engineering College, NIT Jalandhar, NIT Kurukshetra, RTU Kota, ICI Chennai University, DCRUST, Murthal, Guru Jambheshwar University, Hissar**
- **M.E./M.Tech. and Ph.D examiner of different Universities and NITs**
- **Expert for Public Service Commission for Punjab, Rajasthan, Uttarakhand, Madhya Pradesh**

MEMBER SHIP OF TECHNICAL ASSOCIATIONS

Sr. No.	Name of Faculty	Technical Association
1	Dr.Hemant Sood, Dr. Sanjay Sharma, Prof. Ajay Duggal, Prof. Vinod Sonthwal, Dr. Amit Goyal, Er. Himmi Gupta	Indian Society of Technical Education (ISTE)
2	Dr.Hemant Sood, Dr. Sanjay Sharma	The Institution of Engineers
3	Dr.Hemant Sood, Dr. Sanjay Sharma, Dr. Amit Goyal, Er. Himmi Gupta	Indian Concrete Institute (ICI)
4	Dr. Sanjay Sharma	Institution of Water and Environment (India)



000254

The Institution of Engineers (India)

INSTITUTIONAL MEMBERSHIP
CERTIFICATE

This Certificate of
Institutional Membership is Granted to

**NATIONAL INSTITUTE OF TECHNICAL
TEACHERS TRAINING AND RESEARCH**

On the 5th October day of 2021



IM000724-4

PATENT FILED

- **Ecofriendly Process of Recycling the Electroplating Waste Sludge and the Products thereof, Application No. 202111003824 dated 28.01.2021**

Inventors:

- **Dr. Sanjay Sharma (Professor, Civil Engg, NITTTR Chandigarh)**
- **Sivasankara Rao Meda (Research Scholar, NITTTR Chandigarh)**
- **Dr. G.D. Tyagi (Technical Director, Shivalik Agro Poly Products Ltd.)**
- **Narinder Mohan(Wholeman Director, Eastman Cast & Forge Ltd.)**
- **Abhishek Gupta (Research Scholar, NITTTR Chandigarh)**
- **Earthquake resistant visco-elastic energy dissipator link elements” in the name of Indian Institute of Technology, Roorkee, Application no. 201711014897, dated. 27.04.2017.**

Inventors:

- **Goyal, Amit**
- **Agarwal, Pankaj**

READERS AND MODULES

FACULTY NAME	READERS	MODULES	VIDEO FILMS	TEXT BOOKS	LAB MANUALS	CAI PACK-AGE
HEMANT SOOD	3	4	21	-	2	5
SANJAY SHARMA	6	-	-	2		-
AJAY DUGGAL	11	-	13	-	6	1
VINOD SONTHWAL	3	-	5	-	-	-
HIMMI GUPTA	7	-	-	-		-

EDUCATIONAL VIDEO FILMS

AGGREGATES

Sr.NO	Name of Video film	No. of Hits
1	<u>Bulking of Fine Aggregate</u>	138 K
2	<u>Bulk Density and Voids of Fine Aggregate</u>	125 K
3	<u>Silt Content in Fine aggregate</u>	19K
4	<u>Sieve Analysis of Fine Aggregate</u>	100 K
5	<u>Specific Gravity and Water Absorption of Fine Aggregate</u>	219 K
6	<u>Sieve Analysis of Coarse Aggregate</u>	189 K
7	<u>Bulk Density and Voids of Coarse aggregates</u>	88 K
8	<u>Specific Gravity and Water Absorption of Coarse Aggregate</u>	394 K
9	<u>Aggregate Crushing Value</u>	80 K
10	<u>Aggregate Impact Value</u>	324
11	<u>Flakiness and Elongation Index</u>	355 K
12	<u>Los Angeles Abrasion Value</u>	90 K

CEMENT

1	<u>Testing of Cement Part I (Normal Consistency, Initial Setting and Final Setting Times)</u>	178 K
2	<u>Testing of Cement Part II (Compressive Strength and Soundness of cement)</u>	82 K
3	<u>Testing of Cement Part III (Specific Surface area of cement)</u>	91 K

CONCRETE

1	<u>Compressive strength of cement concrete cubes</u>	1000 K
2	<u>Workability of concrete by slump cone apparatus</u>	13 K
3	<u>Workability of concrete by compacting factor apparatus</u>	163 K

EDUCATIONAL VIDEO FILMS

SOIL		
Sr.NO	Name of Video film	No. of Hits
1	<u>Liquid limit determination by cone penetrometer</u>	85 K
2	<u>Standard Penetration Test</u>	318 K
3	<u>Direct Shear Test</u>	465 K
4	<u>Grain size analysis of soil</u>	182 K
5	<u>Determination of Water Content of Soil by Oven Drying Method</u>	211 K
6	<u>Determination of Liquid Limit and Plastic Limit of Soil</u>	487 K
7	<u>Determination of Dry Density of Soil by Sand Replacement Method</u>	850 K
8	<u>Determination of Dry Density of Soil by Core Cutter Method</u>	469 K
9	<u>California Bearing Ratio (CBR) Value Test</u>	543 K
BITUMEN		
1	<u>Penetration Value of Bitumen</u>	295 K
2	<u>Ductility Test of Bitumen</u>	205 K
3	<u>Softening Point of Bitumen</u>	256 K
WATER		
1	<u>Turbidity Measurement</u>	179 K
2	<u>Residual Chlorine Measurement</u>	95 K
3	<u>Measurement using Water Analysis Kit</u>	4.2 K
4	<u>Measurement of ph Value</u>	124 K
5	<u>Measurement of Dissolved Oxygen</u>	49 K
6	<u>Measurement of Conductivity</u>	222 K
7	<u>Determination of Hardness of Water</u>	556 K

EDUCATIONAL VIDEO FILMS

FIELD BASED		
Sr.No	Name of Video film	No. of Hits
1	<u>Earth moving equipment</u>	11 K
2	<u>Construction of Flexible pavement</u>	50 K
3	<u>Construction of Pile foundation</u>	111 K
4	<u>Sewage Treatment</u>	4 K

STUDENT TEACHER RATIO

Year	CAY (2020-21)	CAY_{m1}(2019-20)	CAY_{m2} (2018-19)
p1.1	25	25	28
p1.2	25	28	28
PG1	p1.1+p1.2 = 50	p1.1+p1.2=53	p1.1+p1.2=56
Total No. of Students in the Department (S)	UG1 + UG2 +.. +UG_n+ PG1 + ...PG_m = 50	UG1 + UG2 +.. +UG_n + PG1+... PG_m =53	UG1 + UG2 +.. +UG_n + PG1+... + PG_m =56
No. of Faculty in the Department (F)	6	6	5
Student Faculty Ratio (SFR)	SFR1=S1/F1 = 8.33	SFR2= S2/F2 = 8.83	SFR3= S3/F3 = 11.2
Average SFR	SFR=(SFR1+SFR2+SFR3)/3 = 9.45		

WORKSHOPS CONDUCTED

Sr. No.	Name of the Workshop along with dates
1	Workshop and Exhibition on Energy Efficient Building Materials by PEDDA, Chandigarh and Bureau of Energy Efficiency- 31.05.2019
2	Workshop on “Latest Structural Engineering using STAAD PRO” , 13.02.2019
3	Student training on “STAAD.Pro Connect for Structural Analysis, Design and Detailing of RCC and Steel Structures” 27-28 Aug.2018
4.	Workshop on Structural Design using SPACE GASS Software 28.02.2018
5.	Workshop on "LEAP BRIDGE SOFTWARE“ , 06.02.2018

CONFERENCES ORGANISED

- **National Conference/Seminar on Sustainable Civil Engineering Practices (NCSCEP) 18-19 Mar, 2016. (200 Participants)**
- **National Conference on New Generation Concrete, April 2017. (150 Participants)**
- **International Conference on Clean Technologies for Sustainable development, Feb 2020. (250 Participants)**



R & D, Consultancy Projects

MAJOR AREAS OF CONSULTANCY PROJECTS

- **Concrete Mix Design**
- **Design of Bituminous Mixes, Quality control in highways**
- **Design of Highway & Airfield Pavements**
- **Soil Investigations and bearing capacity determination**
- **Testing of Civil Engineering Materials**
- **Water & Waste Water Analysis**
- **Non Destructive Testing**
- **Environmental Studies**
- **Repair & Rehabilitation of structures**

OUR CLIENTS

- **PWD, Himachal Pradesh , Haryana , Rajasthan**
- **Punjab Infrastructure Development Board**
- **Airport Authority of India**
- **Chandigarh Administration**
- **Municipal Corporation, Chandigarh, Mohali & Panchkula**
- **MES (Air Force)**
- **National Thermal Power Corporation (NTPC)**
- **National Building Construction Corporation (NBCC)**
- **HUDA , PUDA & GMADA**
- **Himachal Urban Development Authority**
- **Larsen & Toubro**
- **Defence Research & Development Organisation (DRDO)**
- **Border Road Organization (BRO)**

OUR CLIENTS-Contd.

- **Power Grid Corporation of India Limited**
- **State Electricity Boards**
- **Haryana State Industrial Development Corporation**
- **Punjab Mandi Board**
- **Punjab Police Housing Corporation**
- **Central Scientific Industrial Organisation(CSIO)**
- **Institute of Microbial Technology (IMTECH)**
- **Indian Institute of Science Education and Research (IISER)**
- **National Institute of Pharmaceutical Education and Research (NIPER)**
- **Central Public Works Department (CPWD)**
- **Infosys**
- **Central Pollution Control Board**
- **Various Private organizations**

CONSULTANCY AREAS AND TEAM

PI/Team	Area of Project
Dr.Hemant Sood/ Er. Jasvir Singh Rattan	Concrete Technology
Dr. Sanjay Sharma / Dr. Amit Goyal	Non Destructive Testing
Dr. Sanjay Sharma / Mrs. Jyothi PM	Environmental Engineering
Er. Ajay K Duggal / Mrs. Jyothi PM	Highway Engineering
Er. Vinod Kumar Sonthwal / Er. Jasvir Singh Rattan	Soil Engineering

SPONSORED R &D PROJECTS

Sr. No.	Financial Year	Title of the Project	Name of the Faculty Coordinator	Name of the Funding agency	Amount Received (In lakhs)
1	2019	Analysis & Implementation of Earthquake resistant interlinked Block Masonry System with Visco-Elastic Energy Dissipator Links	Dr. Sanjay Sharma/ Dr. Amit Goyal	DST	125.3
2	2017-18	Developing solutions for solid waste management	Dr. Sanjay Sharma/Dr. Amit Goyal/ Er. Himmi Gupta	DROSS Management Systems & Energy Solutions Pvt. Ltd	60.91
3	2016-17 (Continued till Dec. 2021)	Unnat Bharat Abhiyan	Dr. Sanjay Sharma/ Dr. Amit Goyal	AICTE	5.00

SPONSORED R &D PROJECTS

Sr. No.	Financial Year	Title of the Project	Name of the Faculty Coordinator	Name of the Funding agency	Amount Received (In lakhs)
4	2016-17	Rainwater harvesting induced artificial recharge: Effect on ground water in Chandigarh	Dr. Sanjay Sharma	Chandigarh Administration	1.20
5	2009-16 (Continued till 2019-20)	High Performance Fiber Based Composite Infrastructural Systems Utilizing Advanced Composites	Dr. Sanjay Sharma/ Dr. Amit Goyal	AICTE	34.40

SPONSORED PROJECTS FOR TRAINING

Sr. No.	Financial Year	Title of the Project	Name of the Faculty Coordinator	Name of the Funding agency	Amount Received (In lakhs)
1	2020	Technology Foresight studies on Advanced manufacturing technologies for sustainable future	Dr. Amit Goyal/ Dr. Sanjay Sharma	DSIR	16.00
2	2019-20	Sustain and Enhance Technical Knowledge in Solar Energy System	Dr. Sanjay Sharma	Department of Environment, Chandigarh Administration	11.70

SPONSORED PROJECTS FOR TRAINING

Sr. No	Financial Year	Title of the Project	Name of the Faculty Coordinator	Name of the Funding agency	Amount Received (In lakhs)
3	2019-20	Skill training program on ETP/STP/ CEPT operations	Dr. Sanjay Sharma	Department of Environment, Chandigarh Administration	11.00
4	2018-19	Skill training program on solar energy enhancement	Dr. Sanjay Sharma	Department of Environment, Chandigarh Administration	10.00
5	2016-17	Capacity Building for ECBC Code in Punjab	Dr. Sanjay Sharma, Er. Himmi Gupta	PEDA	75.00
6	2015 (Continuing till date)	Laboratory Management Systems	Dr. Sanjay Sharma, Er. Himmi Gupta	NABET	4.00 Annually

RESEARCH PROJECTS (Ph.D Scholars)

- **Development of Self Compacting Concrete using blend fly ash and rice husk**
- **Experimental and finite element investigations for soil subgrade strength improvement using geo-synthetics and fly ash-RHA stabilizers-**
- **Design & Development of Pollution Prevention Techniques in Cotton Based Textile Industry**
- **Analysis of environmental management plans of Infrastructure projects and development of Model for effective implementation of Environmental impact assessment**
- **Development of Geopolymer Based Ferrocement Panels under Flexural Loading**
- **Experimental investigations on utilization of waste foundry slag with alccofine in developing high strength concrete**
- **Design and Development of MSW waste based concrete**
- **Permeability & Strength Characteristics of Geopolymer Concrete**
- **A Study of Design and Analysis of RCC Structures Using Different Software with Emphasis on special Concretes**

RESEARCH PROJECTS (Ph.D Scholars)

- **Development of Design Tools for construction of Zero energy Buildings**
- **Structural performance of Densified small particles based RC joints**
- **Integrated Ground Water Management for Chandigarh**
- **Planning for slum free cities**
- **Investigation on High Performance Fiber Reinforced Concrete Frames**
- **Strengthening of High Performance Concrete Beam Column Joints using FRP**
- **Analysis of behavior of high performance Slurry in Filtrated Fibrous concrete on Anchorage zone of Post Tensioned Girder**
- **Flexural behavior of high performance self compacting Fibrous concrete**
- **Development of Nano structural based polyurethane waterproofing Membrane**
- **Development of Performance Assessment Framework for Benchmarking Smart City in India**

Facilities and Technical Support

DEPARTMENT OF CIVIL ENGINEERING

Our Supporting Staff

Sr. No.	Name of the Staff Member	Designation	Qualification
1	Er. Jasvir Singh Rattan	Senior Technical Assistant	M.Tech (Civil Engineering)
2	Er. Jyothi PM	Senior Technical Assistant	M.E.-Civil Engg. (CTM)
3	Sh. Sohan Lal	Junior Secretariat Assistant	Diploma in Civil Engineering
4	Sh. Kali Ram	Lab Attendant	8th Pass

INFRASTRUCTURE DETAILS

Sr. No.	Category	Number of Rooms
1	Laboratories	08
2	Class Rooms	01
3	Seminar Rooms	01
5	Faculty Rooms	06
6	Meeting Room	01
7	Departmental Library	01

- **Ethernet Connectivity- 1Gbps**
- **Wi-Fi Connectivity – 200 Mbps**
- **LCD Projector**
- **LEDs**

DEPARTMENTAL LABORATORIES

Sr.No	Name of the Laboratory
1	Concrete Technology Laboratory
2	Soil Engineering Laboratory
3	Highway Engineering Laboratory
4	Environmental Engineering Laboratory
5	Non Destructive Testing Lab
6	Surveying Lab
7	Hydraulics Lab
8	Computer Application Lab

LABORATORIES AND RESERACH FACILITIES



CONCRETE TECHNOLOGY LABORATORY



ENVIRONMENTAL ENGINEERING LABORATORY



HIGHWAY ENGINEERING LABORATORY



SOIL ENGINEERING LABORATORY

Continuous Improvement

MODERNISATION OF LABORATORIES

- Non Nuclear Density Gauge
- Bending Beam Rheometer
- Ferrosan PS 250
- Particulate Monitoring Equipment
- Dynamic Cone Penetrometer
- Bentley Academic Subscription for 50 Users
(STAAD Pro, STAAD Advanced Concrete Design, Leap Bridge System, Microstation, Water Gems, Sewer Gems and Storm CAD, Lumen RT, Content Capture)
- Auto CAD 2023



TYPE OF PROJECTS (NEW)

Thesis work :

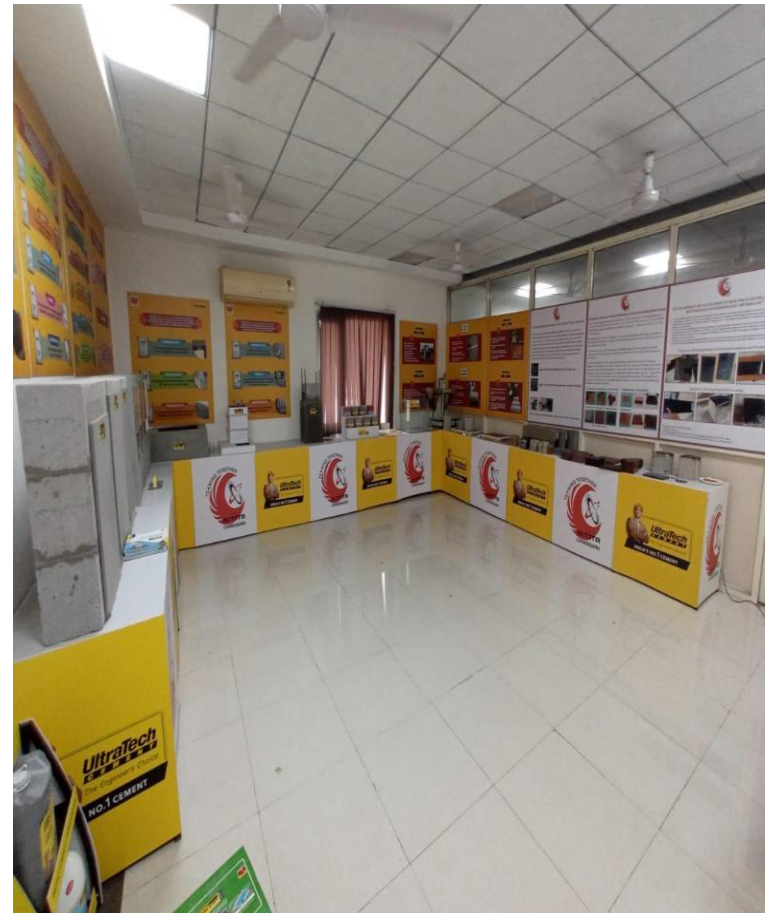
- Thesis work has been encouraged in emerging areas of Artificial Intelligence and Machine Learning
- Enhancing the analytical capability of students by using the latest software

Consultancy Projects :

- Advanced Concrete Mix Design which Includes Self Compacting Concrete, Abrasion Resistant Concrete
- Design of Cement Treated Base and Sub base for pavements
- Design Recommendations for roads based on axle load survey, condition survey and software
- Evaluation of Building Strength and Rehabilitation recommendations on Strengthening measures/Retrofitting

CENTRE OF EXCELLENCE

- MOU was signed with Ultratech Cement Limited in 2015.
- Workshops and seminars were conducted in Collaboration with Ultratech Cement Limited for field Engineers and Technical Teachers
- MOU was re-signed in 2022 and a Centre of Excellence has been established in which they will be sharing with us the information of recent and sustainable products available in the industries and it will also be displayed in the Centre.



FUTURE OBJECTIVES AND PLANS

- **To offer programs in flexible mode to serve large clientele**
- **To establish centres of excellence in Civil Engineering in collaboration with Industry**
- **To fulfil the training needs of Civil Engineering teachers across neighbouring countries**
- **To focus on research in emerging areas of Civil Engineering and Management**
- **To work as facilitators for Start-ups**
- **To provide multi-disciplinary education, training and research**
- **Initiating Programs: M.Tech-PhD-Five years; Extended Masters with TA-ship-Three Years; with modest Intake capacity**
- **PG programmes in Multi-disciplinary areas such as Smart Infrastructure, Cleaner Production technologies and Sustainable Development shall be launched**
- **Collaborative Programs with Universities abroad/Elite Institutes within country**



THANK
YOU